

Appl. No. 10/666,301
Amdt dated Jun. 27, 2005
Reply to Office Action of Jan. 26, 2005

Amendments to the Claims:

This listing of the claims will replace all prior versions and listings in the application.

Listing of Claims:

1. – 25. (Cancelled)

26. (Currently Amended) An electrosurgical device comprising:

an elongate member having a proximal region and a distal region comprising a functional tip, the said distal region shaped comprising a portion manufactured to have a desired curve shape, such that the said functional tip is automatically directed towards a desired location in a desired direction after perforating an interatrial septum;

at least one electrode associated with the said functional tip for cutting tissue, the said at least one electrode adapted for coupling to an electrical energy source; and

a pressure sensing mechanism associated with the said distal region for sensing pressure at a desired location within a patient, the mechanism adapted for coupling to a pressure monitoring system.

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Currently Amended) The device as claimed in claim 26 wherein the said pressure

sensing mechanism comprises a pressure transmitting lumen defined within the said elongate member extending from the said proximal region to couple to at least one opening defined in the said distal region.

31. (Currently Amended) The device as claimed in claim 30 wherein the said proximal region is adapted for comprises a means of coupling the said pressure transmitting lumen to a pressure transducer associated with the said pressure monitoring system.
32. (Currently Amended) The device as claimed in claim 31 wherein the said proximal region further comprises a means pressure transmitting lumen is adapted for at least one of injecting a fluid to or removing a fluid from the said patient[.] through said pressure transmitting lumen.
33. (Currently Amended) The device as claimed in claim 30 wherein the said at least one electrode is coupled to the said electrical energy source by a coupling means extending through the said pressure transmitting lumen.
34. (Currently Amended) The device as claimed in claim 26 wherein the said pressure sensing mechanism comprises an on-board pressure transducer adapted for communicating a transduced pressure signal representative of pressure about the said distal region to the said pressure monitoring system.
35. (Cancelled)
36. (Currently Amended) The device as claimed in claim 26 wherein the said electrical energy source is capable of providing high-frequency electrical energy to the said functional tip in a high impedance range.
37. (Currently Amended) The device as claimed in claim 26 wherein the said proximal region is adapted to comprises a means of releasably coupl[ing] the said

pressure sensing mechanism to the said pressure monitoring system.

38. (Currently Amended) The device as claimed in claim 26 wherein the said proximal region is adapted to comprises a means of releasably coupl[[e]]ing the said at least one electrode to the said electrical power source.

39. (Cancelled)

40. (Currently Amended) A method of creating a perforation in a heart septum comprising the steps of:

applying a form of energy to a perforation device positioned at a desired location of a heart septum to create a perforation at the said desired location, wherein the said perforation device comprises an elongate member having a proximal region and a distal region capable of adopting a curved shape and wherein said distal region comprises a portion manufactured to have a desired curve shape; and

while advancing a distal tip of the device through the septum, directing the distal tip in a desired direction, such that said distal tip is automatically directed away from cardiac structures while being advanced, due to the shape of the curved portion;

whereby said distal tip is directed away from said cardiac structures in order to decrease risk of unwanted injury.

41. (Cancelled)

42. (Cancelled)

43. (Cancelled)

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44. (Currently Amended) The method of claim 40 wherein the said perforation device comprises a pressure sensing mechanism for sensing pressure at the said distal tip and wherein the method comprises monitoring the said pressure to indicate a location of the said distal tip.
45. (Currently Amended) The method of claim 40 wherein the said perforation device comprises an orientation indicator for determining a direction of the said distal tip and wherein the method comprises monitoring the said orientation indicator to advance the said distal tip through the said septum in a desired direction.
46. (New) The method as claimed in claim 40, further comprising the steps of inserting said perforation device into a guiding catheter and advancing said perforation device through said guiding catheter within a patient's vasculature, wherein said distal region conforms to a shape of said guiding catheter when inserted into said guiding catheter.
47. (New) The method as claimed in claim 46, wherein said distal region further comprises a substantially straight portion distal to said curved portion and wherein the method comprises a further step of advancing said substantially straight portion of said distal region out of a tip of said guiding catheter in order to position said device at said desired location for creating a perforation.
48. (New) The method as claimed in claim 40 wherein the energy is in the form of electrical current energy in the radio frequency range and wherein the energy is applied to ionize a conductive medium on top of a target tissue resulting in a low temperature molecular disintegration.
49. (New) The method as claimed in claim 40, wherein the energy is in the form of mechanical energy and wherein said perforation device comprises a sharp distal tip.

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50. (New) The method as claimed in claim 40 wherein said desired location comprises cellular tissue and wherein sufficient energy is delivered to the tissue so as to cause cell lysis to occur.
51. (New) A device for creating a perforation in material within a patient comprising:

an elongate member having a proximal region and a distal region comprising a portion manufactured to have a desired curve shape; and

a functional tip associated with said distal region for delivering energy to create said perforation;

wherein the curved portion is sufficiently pliable so as to conform to a first shape while constrained and to assume said desired curve shape when unconstrained, wherein said first shape and said desired curve shape differ.
52. (New) The device as claimed in claim 51, wherein said distal region and said proximal region are made of different materials.
53. (New) The device as claimed in claim 51 wherein said desired curve shape is defined by a radial arc.
54. (New) The device as claimed in claim 53 wherein said desired curve shape extends about 270 degrees of the circumference of a circle.
55. (New) The device as claimed in claim 51 wherein said proximal region comprises a marking indicative of the orientation of said curved portion.
56. (New) The device as claimed in claim 51 wherein said material is tissue of a heart septum.

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57. (New) The device as claimed in claim 51 wherein said energy is mechanical and said functional tip comprises a sharp tip.
58. (New) The device as claimed in claim 57 wherein a portion of said distal region is made of super-elastic metal.
59. (New) The device as claimed in claim 51 wherein said energy is at least one form of energy selected from a group consisting of: electrical current; microwave; ultrasound; mechanical; and laser.
60. (New) The device as claimed in claim 59 wherein the energy is electrical current having a frequency within the radio frequency range.
61. (New) The device as claimed in claim 51 comprising a pressure sensing mechanism associated with said distal region for monitoring pressure about said distal region.
62. (New) The device as claimed in claim 61 wherein said pressure sensing mechanism comprises a pressure transmitting lumen extending between the proximal and distal regions; the lumen adapted at said proximal region for fluid communication with a pressure transducer and adapted at said distal region for fluid communication with an environment about said distal region.
63. (New) The device as claimed in claim 62 wherein said distal region defines at least one opening to said environment and wherein said lumen is in fluid communication with said at least one opening.
64. (New) The device as claimed in claim 61 wherein said pressure sensing mechanism comprises a pressure transducer on-board said distal region, the transducer being adapted for communication with a pressure monitoring system.

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65. (New) The device as claimed in claim 51 wherein said functional tip comprises at least one active electrode.
66. (New) The device as claimed in claim 65, wherein said elongate member is at least partially electrically insulated.
67. (New) The device as claimed in claim 65, wherein said at least one active electrode is electrically coupled to an energy source via an electrically insulated conducting wire.
68. (New) The device as claimed in claim 65 wherein said at least one active electrode comprises an active electrode with an outer diameter of substantially 0.04 cm.
69. (New) The device as claimed in claim 51 wherein the functional tip comprises two or more electrodes.
70. (New) The device as claimed in claim 69 wherein said device is structured such that a first electrode is coupled to a first electric pole and a second electrode is coupled to a second electric pole when said device is connected to an energy source, whereby electrical current flows between said first electrode and said second electrode when energy is delivered to said device.
71. (New) The device as claimed in claim 51 wherein the distal region comprises a distal portion and a proximal portion, the distal portion defining a substantially straight shape and the proximal portion defining said desired curve shape.
72. (New) The device as claimed in claim 71 wherein all electrically conductive and exposed components associated with said distal region are located at the straight distal portion.

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73. (New) The device as claimed in claim 51 further comprising at least one lumen extending from said proximal region to said distal region.
74. (New) The device as claimed in claim 51, wherein an outer diameter of said distal region is less than an outer diameter of said proximal region whereby dilation of said perforation is limited when said distal region is advanced through said perforation.
75. (New) The device as claimed in claim 74, wherein an outer diameter of said elongate member is tapered from the outer diameter at said proximal region to the outer diameter at said distal region.
76. (New) An electrosurgical device comprising:
 - a means for creating a void in a bodily tissue; and
 - a means for minimizing the risk of inadvertent injury after the device is advanced through said void.
77. (New) The device as claimed in claim 76, wherein the means for minimizing risk of injury comprises a curve shape whereby at least a distal region of said device is structured to automatically adopt said curve shape after said device is advanced through said void.
78. (New) An electrosurgical system comprising:
 - a high-impedance radio frequency electrical generator; and
 - a device for creating a void in a bodily tissue;

wherein said device comprises an elongate member having a proximal region and a distal region comprising a portion manufactured to have a

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desired curve shape, and at least one active electrode associated with said distal region for delivering energy from the generator to create said void.

79. (New) The system as claimed in claim 78, wherein said device further comprises a pressure sensing mechanism associated with said distal region and wherein said system further comprises a pressure monitoring system for receiving pressure measurements from said pressure sensing mechanism.